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Moral sentiments, democracy and redistributive politics: between nature and culture

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Abstract

According to the standard economic approach, the level of redistribution in a democratic society is growing with the inequality of the income distribution. However, data do not support such a finding. In this article, we assert that the canonical model fails first in its basic assumption, the fundamental selfish nature of human beings. Following Adam Smith as well as modern cognitive sciences, we then suppose that a moral instinct coexists with a selfish one. It follows that democracy, based on a unanimous agreement and not on a majority of voters as in the standard approach, can be characterized by two different cultures. In the first one, in the spirit of Locke, individual property comes before the government. In such a culture, we show that a growing difference between median and mean incomes is not necessarily associated with a higher redistribution. In the second culture, in the spirit of Rousseau, the general will comes before particular interests. As a result, we find that in such a culture an increase of the top incomes can quite paradoxically reduce redistribution.

Keywords: redistribution, voting behavior, natural morality, neuroeconomics

JEL: H53, D72, D64, D87

1 Introduction

Since the influential work of Adam Smith, most economists postulate that individuals are driven only by their self interest. Moreover, in the mainstream, if the public choice belongs to a majority of citizens, the level of redistribution is growing with income inequality, as showed by Meltzer and Richard (1981). Considered as a reference framework to describe policies in democratic societies, this model seems nevertheless inconsistent with the facts. While pre-tax income distribution is more unequal in the United States than in Europe, the redistribution level is lower in the former than in the latter. Only few empirical studies support the model. Most of them find no significant correlation between redistribution and income inequality or the reverse one[1]. Extensions, introducing imperfections in the credit, the insurance or the political markets (see for example Benabou, 2000), have tried to improve the predictions of the model. But these extensions remain unsatisfactory if the canonical model fails in its basic postulate, the fundamental selfish nature of human beings.

Most trade economists are certainly right to retain from Adam Smith (in *The wealth of nations*, 1776) that "*It is not from the benevolence of the butcher, the brewer, or the baker, that we can expect our dinner, but from their regard to their own interest.*" But, as suggest by Sen (1987, 1997) and Akerlof and Dickens (1982), political economists should retain from him as well (in *The theory of moral sentiments*, 1759) that "*How selfish soever man may be supposed, there are evidently some principles in his nature which interest him in the fortune of*

[1] See de Mello and Tiongson (2006) for a recent survey of these studies.

others and render their happiness necessary to him though he derives nothing from it except the pleasure of seeing it." They should for at least two reasons. First, because a growing number of neuropsychologic studies, using the new functional neuroimaging techniques (PETscan or fIRM), show that most of our moral opinions, emotional and automatic[2], are true and not the product of some hidden selfish strategies motivated by the desire for prestige, popularity or acceptance[3].

Second, because recent empirical studies have showed that redistributive politics were closely related to moral motivations. As income distribution is a poor factor in explaining the redistribution level, the differences of values (including the moral ones) between Americans and Europeans have received a growing interest. According to the World Values Survey (Alesina, Glaeser and Sacerdote, 2001), 71% of Americans versus 40% of Europeans believe that poor people could become rich if they worked hard enough. In the same line, data show that only 30% of Americans versus 54% of Europeans believe that luck rather than effort determines income. As suggested in figure 1, econometric regressions have exhibited, conversely with income inequality, strong and significant correlations between these beliefs and redistribution levels (e.g. Alesina, Glaeser and Sacerdote, 2001; Alesina and Angeletos, 2005; Bénabou and Tirole,

[2] As explained by Fehr and Schmidt (2006), "*the term automatic in this case refers to a process that does not require conscious and effortfull processing but which can nevertheless be inhibited or controlled.*"

[3] See Damasio (1994, 2003), Gintis et al. (2003), Fehr and Singer (2005), Fehr and Schmidt (2006), Berthoz et al. (2002, 2006), Moll et al. (2002), Hoffman (2000, 2006), Haidt (2001, 2002).

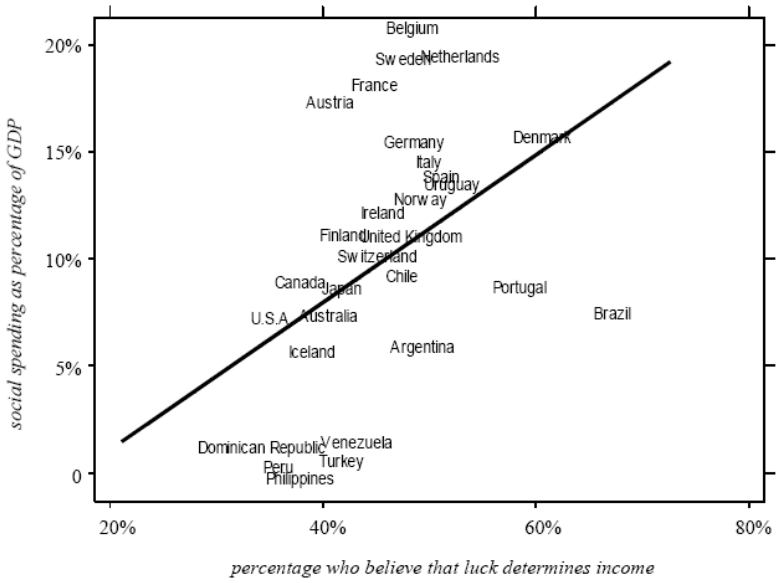

Figure 1: Social spending and luck (source: Alesina, Glaeser, Sacerdote, 2001)

2006). Contrasting with a democratic resolution of a conflict between people looking only for their self interest, redistributive policies appear in these studies as the product of a collective will struggling with unfair income distributions. In this view, the differences in redistribution observed between the United States and the European countries would be the consequence of cultural differences in their moral conception.

As a paradox, the idea of a culturally defined morality finds its roots in the selfish human nature. In the post-modern trend following Nietszsche, Freud or Marx, moral is an illusion product of either some psychic features or social context. It implies that moral values are specific to each society and not universally

shared across societies. Inspired by psychological studies showing that "*individuals have a need to believe that they live in a world where people generally get what they deserve*" (M. Lerner, 1982), Benabou and Tirole (2006) construct a model in the moral relativist philosophy. In their model, moral is an illusion characteristic of a psychic need and selfish people are ideologically influenced (conditioned). Then, the redistribution level is not associated with an objective level of income inequality, but with an ideology which influences the fairness perception of the income distribution.

Against the moral relativism, Boudon (1995, 2005) denounces that this approach implies that "all is the same", "all is good". Quoting for instance Richard Rorty for whom the superiority of democracy over totalitarism is culturally conditioned, Boudon (1995) states that democracy is considered good because it is based on good government principles. Therefore, we feel the superiority of democracy as evidence, and the idea of democracy cannot support cultural relativism and is universally shared, as Amartya Sen (1999) long advocated.

For some supporters of the human naturalist theories, in the line of Spinoza[4], moral evidences are universal because they are genetic. Moral behaviours correspond then to the expression of natural empathic emotions (see Hoffman, 2000,

[4] Spinoza supports that humans have moral emotions as empathy or culpability for survivance. Summarized by Damasio (2003), his prospect is as follow: "*The biological reality of self-preservation leads to virtue because in our inalienable need to maintain ourselves we must, of necessity, help preserve other selves. If we fail to do so we perish and are thus violating the foundational principle, and relinquishing the virtue that lies in self-preservation*". Damasio (2003) stresses thus the link that can be done between Spinoza and Adam Smith.

2006). Conversely, in the Kantian moral[5], man can achieve, by fighting his particular nature with his reason and the power of his will, to behave according to universal moral principles. But inside or outside the nature, product of either genes or reason, these two trends claim that a common core of morality is universally shared and not influenced by the cultural environment. So, how to explain the differences of redistribution levels between countries if they are the product of a universal morality? For Alesina and Angeletos (2005), who introduce a universal fairness incentive in their utility function, it results from the existence of two stable equilibria caused by different self-fulfilled beliefs. By expecting low redistribution, Americans invest in their human capital and generate conditions for low redistribution. By contrast, by expecting a high redistribution, Europeans invest less in their human capital and will support later a high redistribution. In addition, Alesina and Angeletos (2005) show that the low redistribution equilibrium Pareto dominates the high redistribution one. Consequently, we should observe that Europeans are less "happy" than Americans.

However, data do not support this conclusion. According to the World Values Survey (Inglehart and Kligemann, 2000), proportions of people who declare to be happy and satisfied with their lives are quite similar, with 89.5% in the United States and 87% in the Europe (-15). If we follow Stanley Hoffman, Chairman of Harvard's Center for European Studies for 30 years, an objective ranking

[5] Characterized by the imperative "*act only according to that maxim whereby you can at the same time will that it should become a universal law.*"

of the US-EU models of society is impossible because we evaluate a model with the values (and the history) of our own model. Hence, Americans have no reason to be happier, and Europeans are supposed to prefer the European model. In this view, and to avoid a purely unconvincing relativist prospect, understanding the differences of redistribution between the United States and Europe means explaining how universal moral values are compatible with different cultures. In this article, we assume that moral values are universal, but since they are potentially conflicting one with the other, each society needs a cultural norm defining a hierarchy between these values. It follows that democracy, based on unanimous agreement (not on a majority of voters as in the standard approach), is attached to two different cultures. In the first one, in the spirit of Locke, individual property comes before the government. In such a culture, we show that a growing difference between median and mean incomes is not necessarily associated with a higher redistribution. In the second culture, in the spirit of Rousseau, the general will comes before particular interests. A paradox may thus arise: we find that in such a culture an increase of the top incomes can reduce redistribution.

The rest of the article is as follow. In a second part, we present new developments in cognitive sciences. Based on Adam Smith and Fodor (1983), we suppose that the two human instincts – selfishness and altruism – are associated with two unconscious and independent modules of information treatment generating two alternative visions of the world, a selfish and a moral one. Motivations will depend on the selection of one of these visions. In the third part,

we detail the selection process. Following the neurobiologist Antonio Damasio (1994, 2003), we first assert that the selection cannot be rational without emotions. Second, according to an abundant sociological literature, we also assume that members belonging to one society must share the same vision of the world. In a fourth part, we show that different priority norms lead to different redistribution systems. We then conclude on the differences of redistribution between the United States and Europe.

2 Unconscious and visions of the world

Since the early 1980s, fast developments in cognitive sciences have significantly improved the knowledge of decision making. In particular, the neurobiologist Benjamin Libet demonstrated with famous experiments in 1983 that each voluntary decision was preceded by an unconscious[6] mental activity. Some, as the psychologist Daniel Wegner (2002), interprete this finding as a proof that free will and voluntary decision were illusions. Others, as the philosopher Jerry Fodor (1983), father of the modularity theory of mind, do not. In Fodor's architecture[7], mind is composed of different modules (from which one moral), each of them treating automatically and unconsciously its own information up

[6] Unconscious refers here to the cognitive unconscious, not to Freud's psychoanalitic concept. For psychoanalysis, the unconscious represents what is actively repressed from conscious thought. In cognitive sciences, unconscious refers to the automatic mental activity that is not mediated by conscious awareness. In this literature, the term "nonconscious" can replace the term "unconscious".

[7] See Nurock (2004) and Pharo (2004).

to the point of forming a mental representation. A mental representation is associated with primary intuitions which are both *universal* (independent of the cultural environment), *precocious* (concern also very young children), *specific* (to certain interactions), *automatic* and *irrepressible*. But, as argued by Fodor, human behavior cannot be reduced to automatic, quick and irrepressible releases. Instead, he supports that only one part of the mind is modular and that a conscious part - named by the psychologist Baars (1988) and the neuroscientists Dehaene, Kerszberg and Changeux (1998) the "*Global Workspace*" (GW) - exists.

Since the end of the 1990s, using the new functional neuroimaging techniques (PETscan and *f*IRM), neurologists (see Dehaene and Naccache, 2001, Dehaene et al., 2006, and Naccache, 2006) have studied the characteristics of the conscious GW. They first showed that it could hold only one mental representation. Then they derived then that the access of a mental representation to consciousness depends on the state of the GW: if already occupied, access is denied and the mental representation disappears. Furthermore, Naccache (2006) asserts that when a situation is characterized by conflicting mental representations, the cognitive conflict leads to the voluntary selection of a unique representation. Hence the voluntary decision is a selection process, not a creation one.

In the line of Adam Smith and new developments in cognitive sciences, we assume that choices concerning the whole society, e.g. on income redistribution, are associated with two unconscious mental representations, a selfish and an altruistic one, and that the selection of one mental representation defines the

vision of the world which is associated to specific goals and actions[8] (see figure 2).

2.1 The selfish vision

In a traditional way, we assume that the selfish instinct urges individuals to maximize their own utility by consuming their disposable income $w(1-\tau)+g$, where w is the (pre-tax) income, τ the payroll tax and g a lump sum allocation. For each individual of type ij, the income is

$$w_{ij} = \alpha_i + \gamma e_i + \eta_j, \tag{1}$$

where e_i is his effort, γ and α_i are two positive parameters, and η_j is such that $\int \eta_j dG(j) = 0$. If we suppose that effort involves a utility loss equal to $\frac{e_i^2}{2\beta_i}$ and that the public budget is balanced, the selfish instinct is associated with the following function:

$$S_{ij} = \left(\alpha_i + \gamma e_i + \eta_j\right)(1-\tau) + \tau\left(\bar{\alpha} + \gamma \bar{e}\right) - \frac{e_i^2}{2\beta_i} \tag{2}$$

Maximization of (2) gives individual effort:

$$e_i = \gamma \beta_i (1-\tau) \tag{3}$$

[8] Such a concept of consciousness corresponds to *access-consciousness* or *A-consciousness*. It has to be distinguished from *phenomenal consciousness* or *P-consciousness*, *self-consciousness* and *monitoring-conscioune*ss (see Block, 1995, 2003).

To simplify notations, we set $\gamma = \sqrt{\theta}$ and $\alpha_i = \theta\beta_i$. With (3), pre-tax income (1) is then:

$$w_{ij} = \alpha_i (2 - \tau) + \eta_j \tag{4}$$

Logically, we now associate this instinctual mental representation with the right of the strongest. Admitting that individuals are characterized by a same force and that the median individual is the mean individual of the median type i ($\eta_{med} = \bar{\eta} = 0$), the reference selfish mental state is associated with the following payroll tax:

$$\tau^s = \frac{2(\bar{\alpha} - \alpha_{med})}{2\bar{\alpha} - \alpha_{med}} = \tau(I) \tag{5}$$

We observe with (5) that the poorer the median individual with respect to mean income, the higher redistribution: $\frac{\partial \tau^s}{\partial I} > 0$. Obviously, this result is similar to the one of canonical model. But it underlines the limits of the democratic features of this model. Indeed, since the median individual separates population into two parts of equal force, he imposes his particular interests to the rest of the population using balance of forces. Far from the idea of democracy, the law of majority voting in the canonical model can be assimilated to the "tyranny of the median voter". For example, if the median income was higher than mean income, eq. (5) would imply that the fiscal system would be reverse-redistributive. But as put forward by Rousseau (*Social contract*, 1762), "*The law of majority voting is itself something established by convention, and presupposes unanimity, on one occasion at least*". In his view, the idea of democracy must

first be based on unanimity.

2.2 The moral vision

In the moral unconscious treatment of information, we suppose that the parameter η_j is perceived as luck (or bad luck). Under this assumption, a *fair* income distribution characterized by $\hat{w}_i = \alpha_i + \gamma e_i$ is shared by each individual, independently of his own income[9]. The logical incentive under the moral vision of the world is that *each people receives what he deserves*[10]. In the presence of fiscal redistribution, it means that the disposable income w_{ij} of each person must be as close as possible of his fair income $\hat{w}_i$. Following the formulation of Alesina and Angeletos (2005), we then characterize the universal moral incentive by:

$$M = \iint \left\{ \left[(1-\tau) w_{ij} + g \right] - \hat{w}_i \right\}^2 dG(i,j) \tag{6}$$

If luck and merit are independently distributed, (6) can be rewritten as:

$$\frac{M}{\sigma_\alpha^2} = (1-\tau)^2 L + \tau^2 (2-\tau)^2 \tag{7}$$

[9] On French data, Piketty (2003) shows that the assumption of such a universal deserved income distribution is funded.

[10] Forsé et Parodi (2006) show that European countries share an identical hierarchy of moral principles: first the guarantee of basic needs, second fairness (like merit), and far less important equality of income. If we admit that basic needs are mostly satisfied in Europe and in the United States, fairness is then the relevant concept to study marginal variations of the redistribution levels.

where $L = \frac{\sigma_L^2}{\sigma_\alpha^2}$ represents the relative importance of luck in the income determination, σ_α^2 and σ_j^2 are respectively the variance of α_i and η_j.

Minimizing unfairness gives the following payroll tax:

$$\tau^m = 1 - \sqrt{1 - \frac{L}{2}} = \tau(L),\ L \leq 2 \tag{8}$$

Under the moral vision of the world, the reference mental state is associated with a redistribution growing with the importance of luck in income determination: $\frac{\partial \tau^m}{\partial L} > 0$.

In the rest of the article, we will suppose that the moral payroll tax is higher than the selfish one:

Assumption 1. $\tau^m > \tau^s$ ■

3 The rationality of emotions

Considered to behave as a selection among unconscious mental representations, decision making gives the image of a human being free to choose his goals (those linked to the selected representation). Nevertheless, the neurobiologist Damasio (1994, 2003) states, with Spinoza and against Descartes, that decision making cannot be rational without emotion. To illustrate his proposal, he presents the case of a man suffering from amygdala lesions (known as the centre of emotion). He explains that the latter cannot detect danger and hence has difficulties to live in society. Using a mouse without amygdala, experiment shows that the latter can run towards a cat and be eaten .

To characterize rational behavior, emotion must be incorporated at the cen-

tre of the selection process. Hence we must define emotions before detailing the selection process. We first define the emotions which are biologically linked to each mental representation. Second, as we cannot think of a man without another man, we consider the social emotions which will conduct to conformism.

3.1 Emotions and homeostasis

In signalling an unpleasant situation, emotions are closely related to homeostasis, i.e. the fundamental property[11] of living organisms to maintain their internal environment within bearable limits. Emotional stimuli coming from amygdala activates the hypothalamus which commands the adrenal glands to prepare the body to action by secreting adrenalin and cortisol. They also activate the brainstem which commands the reflex actions which are eventually relevant considering the situation[12] (see Öhman et al., 1998).

As pointed out by Damasio (1994, 2003) and LeDoux (1996), quick emotional behavior can be controlled and inhibited by the slowly conscious way of action, i.e. by selecting a mental representation with reverse automatic actions. But, if the emotional intensity is too strong and its duration too long, the cortisol secretion will be too substantial and then noxious for brain and for the immune system (see Hamon 2007). Characteristic of the stress, such an inhibition will lead to mental disorder and somatic diseases whose end can be death (suicide in

[11] First characterized by the physiologist Claude Bernard around 1860s, homeostasis is governed by the hypothalamus and the brainstem to organize the automatic defence of the organism.

[12] See Appendix A for a simplified functional description.

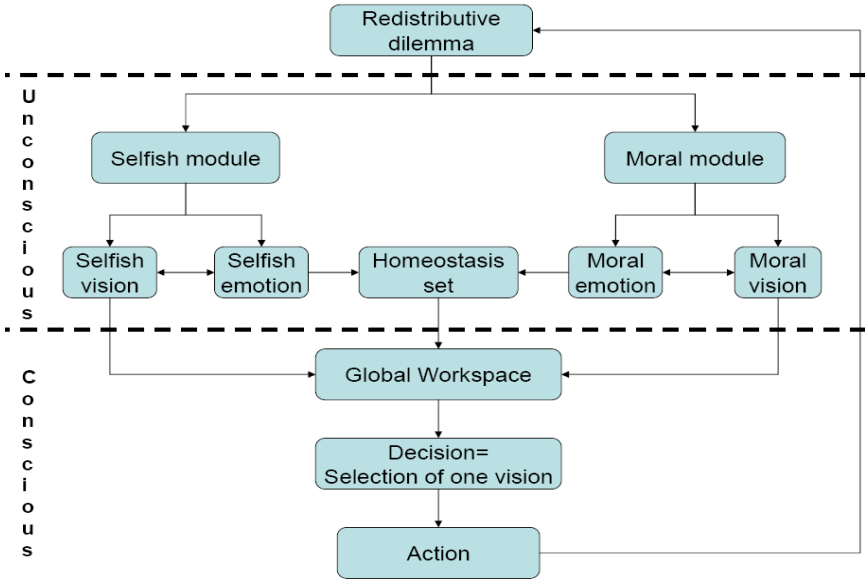

Figure 2: The redistributive dilemma: when A. Smith meets the modularity of mind

the case of mental disorders). If we consider rationality as a survivance principle, we can conclude that in the long run a mental representation cannot be blocked into unconscious if it is associated with a too strong emotional intensity. In this case, the GW is prevented from danger by a conscious feeling.

For each individual ij, let us define his selfish emotion E^s_{ij} as the relative selfish utility difference between a level of payroll tax τ and the selfish reference one τ^{s13}:

[13] In this formulation, we consider emotions under a negative aspect. Therefore, the benchmark selfish state corresponds to the minimum emotional level of the median individual E^s_{med}: $\forall \tau \neq \tau^s$, $E^s_{med}(\tau) > E^s_{med}(\tau^s)$.

$$E_{ij}^{s}(\tau) = 1 - \frac{S_{ij}(\tau)}{S_{ij}(\tau^{s})} \tag{9}$$

In the same spirit, we define the universal moral emotion as:

$$E^{m}(\tau) = 1 - \frac{M(\tau^{m})}{M(\tau)} \tag{10}$$

Let H be the maximum emotional intensity that can be associated with inhibited emotional actions, an individual ij will be able to select freely his vision of the world if and only if the payroll tax belongs to an homeostasis set A_{ij} defined by:

$$A_{ij} = \left\{ \tau \,/ E_{ij}^{s}(\tau) \leq H \text{ and } E^{m}(\tau) \leq H \right\}$$

A unanimous agreement on the level of redistribution is then possible only if the following assumption is satisfied:

Assumption 2. $U = \bigcap_{(i,j)} A_{ij} \neq \varnothing$ ■

3.2 Emotions and Conformity

Considered under a biological aspect, the vision of a man in homeostasis is that of a free man acting according to his own goals (as far as his associated actions belong to the homeostasis set). But considered under a social aspect, a man cannot be considered inisolation, hence outside a system of interactions. For most social scientists (see Merton, 1953), after the influential work of Emile Durkheim, the construction of a society as a coherent system of interactions

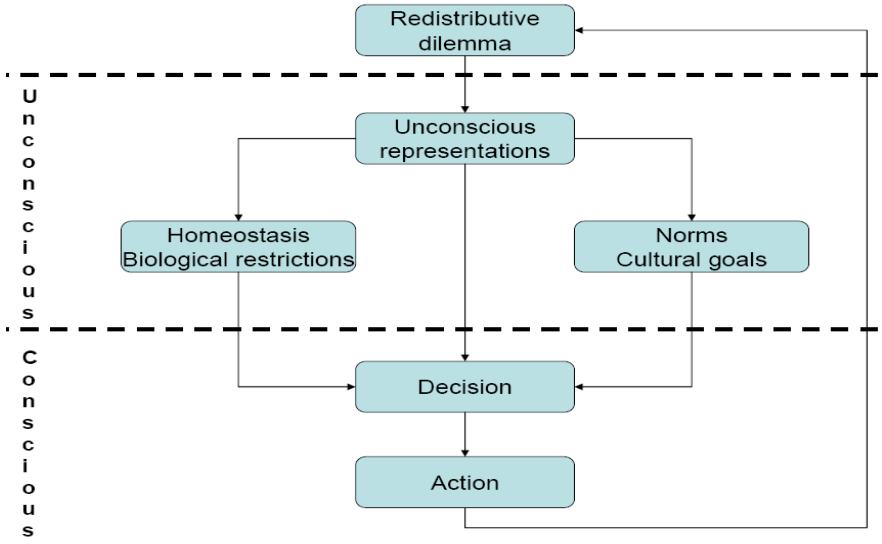

Figure 3: The redistributive dilemma between nature and culture

requires that the members share the same values and act according to the same goals. Humans then create norms of interactions and once created, these norms have feedback power upon humans that constrains their goals attachment and then produces conformism. Since individuals who deviate from the established norm put into danger the coherence of the system[14], they are punished or excluded from the society. Conformity in the goal attachment is required and the individual action in society is culturally defined (see figure 3).

Recently Berthoz et al. (2002, 2006) and Moll et al. (2002), using functional neuroimaging techniques, have brought to the fore the link between deviation from the norm and activation of amygdala and hypothalamus. The conformity

[14] Moscovici (1979) explains that even a small active minority can put into question the established collective norm.

process is then closely related to emotions and stress. For an individual, the mismatch between his goals and the culturally defined ones corresponds to a stressful situation which leads organism towards mental or social disorders and somatic diseases as described by E. Durkheim in *Suicide* (1897) or by Thomas et Znaniecki (1918-1920) in their pioneering work on Polish immigrants in America confronted with conflicting norms.

Let V_{ij}^k be the selected vision of an individual ij in the society k and V_{-ij}^k the majority vision selected by the other members of the same society, we can then associate the conformity process with the following social emotions:

$$E_{ij}^k = \begin{cases} 0 \text{ si } V_{ij}^k = V_{-ij}^k \\ \Phi \text{ si } V_{ij}^k \neq V_{-ij}^k \end{cases} \tag{11}$$

Assumption 3. $\Phi > H$ ■

Under assumptions 2 and 3, the society is characterized by a fully conformed[15] selection of representations and then goal attachment, i.e. $V_{ij}^k = V^k$ $\forall ij$. According to the variety of norms, be they selfish or altruistic, democratic concepts will differ.

4 Democracy and the social contract

According to Hobbes, the first social contract theorist (*Leviathan*, 1651), in order to prevent the "*state of war*" associated with the selfish nature of man, individuals must "*confer all their power and strength upon one man*" for their

[15] Bernheim (1994) explores configurations in which subcultures exist.

self preservation such as "*he to whom they have submitted hath so much power, as by the terrour of it hee can conforme the wills of particular men unto unity, and concord*". For Hobbes, the peaceful society which guarantees the preservation of individuals requires that all of them inhibit their selfish motives to behave according to a universal view and then be treated equally. In this case, redistribution should be characterized by τ^m. But this contract cannot meet all the conditions of harmony. Indeed, since in this contract some people could be characterized by $E_{ij}^s(\tau^m) > H$, it implicitly schedules the disappearence of the selfish part of the population. Therefore, it is hard to think that this part of the population would agree to sign this social contract and that the society based upon it would be peaceful. As a prolongement of Hobbes, Rousseau (*Social contract*, 1762) stresses that "*The problem is to find a form of association which will defend and protect with the whole common force the person and goods of each associate, and in which each, while uniting himself with all, may still obey himself alone, and remain as free as before.*"

Like Rousseau, Locke (*Two treatises of government*, 1689) defines a "*government with the consent of the governed*". But arguing that the state of nature is a state of reason and tolerance, he asserts that "*the law of nature stands as an eternal rule to all men, legislators as well as others.*" In his view, unlike Rousseau, humans have natural property rights which precede government. Therefore, if the ruler went against natural law and failed to protect these natural rights, people could justifiably overthrow the existing state and create a new one.

Democracy, though it is based on universal values, is nevertheless the product of two different norms which lead to two different concepts:

- the liberal democracy where, in the spirit of Locke, individual freedoms and properties come before the government,
- the radical democracy where, in the spirit of Rousseau, the general will comes before particular interests.

4.1 Redistribution and the liberal democracy

In the liberal democracy, individual freedoms are privileged in the collective choice. Thus, each individual looks for minimizing his selfish emotion, in the limit of his ability to inhibate the moral emotion. In this context, the majority rule applies and the emotion of the median individual only matters to characterize the redistribution system. The associated payroll tax τ_L is then determined according to the following program:

$$\tau_L = Arg\min\left[E^s_{med}\left(\tau\right),\ \tau \in U\right] \tag{12}$$

We then derive:

Proposition 1 *Under assumptions 1, 2 and 3, in a liberal democracy, a growing difference between median and mean incomes is associated with a higher redistribution if the difference between median and mean incomes is strong enough.*

Proposition 2 *Under assumptions 1, 2 and 3, in a liberal democracy, if the difference between median and mean incomes is weak enough, perception of more*

unfair incomes leads to more redistribution.

Proof. see Appendix B ■

Proposition 1 corresponds to the case where the "selfish median voter" mechanism applies. Indeed, in the case where the leading value is success (and then money and consumption) and if the moral restrictions are satisfied, the electoral competition implies that if the winning coalition (represented by the median voter) is poor, it will claim a higher redistribution. But if the winning coalition is relatively wealthy, it will claim a low redistribution or even a reverse-redistribution. In such a case, moral principles (represented here by the *merit*) are constraining and the redistribution is characterized by the minimum redistribution level morally acceptable. It follows in this case that if unfairness increases (importance of luck in the income determination), so does redistribution (proposition 2).

4.2 Redistribution and the radical democracy

In the radical democracy, the universal view is privileged for collective decisions. The payroll tax τ_R is then characterized by minimization of the moral emotion as far as the outcome belongs to the consensus set:

$$\tau_R = Arg \min \left[E^m (\tau), \ \tau \in U \right] \tag{13}$$

We then derive:

Proposition 3 *Under assumptions 1, 2 and 3, in a radical democracy, if the*

difference between highest and lowest incomes is weak enough, perception of more unfair incomes leads to more redistribution.

Proposition 4 *Under assumptions 1, 2 and 3, in a radical democracy, if the difference between highest and lowest incomes is strong enough, a growing difference between highest and lowest incomes is associated with a lower redistribution.*

Proof. see Appendix C ■

Proposition 3 has a similar result with proposition 2 but with different features. Indeed, since the leading value corresponds to the *merit*, when unfairness increases (importance of luck in the income determination) the redistribution rise does not appear as an obligation but as a conscious will. When the redistribution is high, proposition 4 underlines that taxation can become unbearable for wealthiest people. It can lead to a paradoxical result. Indeed, a growing unfairness is associated with a conscious will to redistribute more. But if it conflicts the wealthiest people, they form an active minority against the redistribution system. In such a case, as a democratic equilibrium results from a unanimous agreement, a growing unfairness implies a cut in the payroll tax.

5 Conclusion

If we consider that humans are only driven by their self interest, Meltzer and Richard (1981) show that the level of redistribution in a democratic society is growing with the inequality of the income distribution. But Adam Smith, modern cognitive sciences and empirical studies converge in one major point:

morality and altruism are essential to explain redistribution. If we admit that a moral instinct coexists with a selfish one, we show that democracy (based on a unanimous agreement) is associated with two different cultures. In the first one, in the spirit of John Locke, individual property comes before the government. In such a culture, we show that a growing difference between median and mean incomes is not necessarily associated with a higher redistribution. In the second culture, in the spirit of Rousseau, the general will comes before particular interests. We find that in such a culture it may be that an increase of the top incomes can reduce the redistribution.

As each culture is associated with a specific redistributive system, comparing two particular systems has a prerequisite: determining the democratic system. In this view, the differences in redistribution observed between the United States and France would be the consequence of different social models. Indeed, from Tocqueville (*Democracy in America*, 1835/1840), Sombart (*Why is there no socialism in the United States?*, 1906) or Merton (1949), we can straightforwardly associate the United States with John Locke, individualism and the liberal democracy. According to Merton (1949), the first American value is success in earning money, as summarized by one American idol, Andrew Carnegie: "*Be king in your dreams. Say each to yourself: My place is at the top.*" By contrast, in the French society, earning money is a taboo. It is then not surprising to observe that one of the first idol of the French society is L'Abbé Pierre who renounced a wealthy inheritance to devote his life to the poorest. In the line of Rousseau, the French Republic is closely related to the radical democracy.

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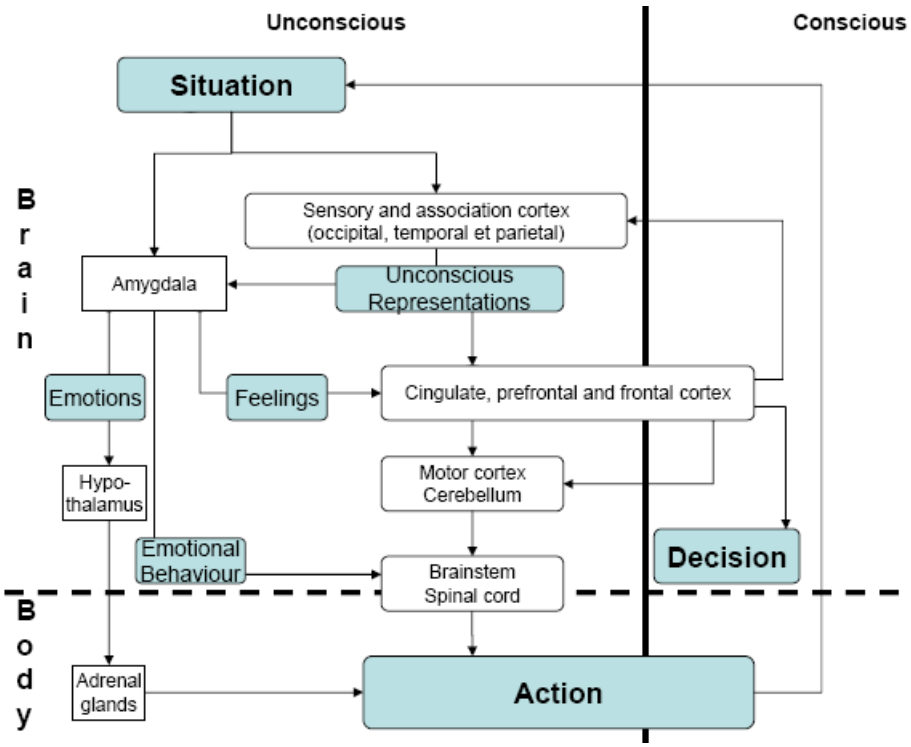
Appendix A. A simplified functional description of the action process



Appendix B. Proof of propositions 1 and 2

Under assumption 1 and 2, $\tau_L = Arg\min\left[E^s_{med}(\tau),\ \tau \in U\right]$ corresponds to the program $\tau_L = Arg\min\left[E^s_{med}(\tau),\ E^m(\tau) \leq H\right]$. For an interior solution, it follows that $\tau_L = \tau^s$ and then, according to (5) and (8), $\frac{\partial \tau_L}{\partial I} > 0$ and $\frac{\partial \tau_L}{\partial L} = 0$. But a "low" (or positive) difference between median and mean incomes can lead to a situation where $E^m(\tau^s) > H$. In such a case, $\tau_L = E^{m(-1)}(H)$ and we find that $\frac{\partial \tau_L}{\partial I} = 0$ and $\frac{\partial \tau_L}{\partial L} > 0$.

Appendix C. Proof of propositions 3 and 4

Under assumption 1, $U = \bigcap_{(i,j)} A_{ij} = \left\{\tau \,/ E^s_{\sup}(\tau) \leq H \text{ and } E^m(\tau) \leq H\right\}$, where $E^s_{\sup}(\tau)$ is the selfish emotion of the richest person in the economy. Under assumption 2, it follows that $\tau_R = Arg\min\left[E^m(\tau),\ \tau \in U\right]$ corresponds to the program $\tau_R = Arg\min\left[E^m(\tau),\ E^s_{\sup}(\tau) \leq H\right]$. For an interior solution, it follows that $\tau_R = \tau^m$ and then, according to (5) and (8), $\frac{\partial \tau_R}{\partial I} = 0$ and $\frac{\partial \tau_R}{\partial L} > 0$. But for a strong unfairness level L, we can have $E^s_{\sup}(\tau) > H$. In such a case, $\tau_R = E^{s(-1)}_{\sup}(H)$ and it follows that $\frac{\partial \tau_R}{\partial w_{\sup}} < 0$.